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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/642,343 | 08/18/2003 | Josef Giessler | 029777-015 | 1920 |
| 21839 | 7590 | 11/30/2005 | EXAMINER | |
| BUCHANAN INGERSOLL PC (INCLUDING BURNS, DOANE, SWECKER & MATHIS) POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404 | | | ADDISU, SARA | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3722 | |

DATE MAILED: 11/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/642,343

Applicant(s)

GIESSLER ET AL.

Examiner

Sara Addisu

Art Unit

3722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>1/8/04 and 3/10/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Claims 1-10 in the reply filed on 9/15/05 is acknowledged.

Regarding Applicants argument filed on 9/15/05 that, "A grinding process (rotating an abrasive disk) is the only known method to produce the cutting edges on the periphery of the claimed rotary tool", Examiner respectfully disagrees. Other methods of forming sharp cutting edges include for example Focused ion beam (FIB) milling

Drawings

- The drawings are objected to because references: dm_m , l_2 , a_p , D_c and b_n are not described in the Specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the

remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

- The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "the chamfer having an axial extension shorter than an axial extension of a transition from the cutting-face angle to the helix angle" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the

replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: references dm_m , l_2 , a_p , D_c and b_n from figures 1 and 3a are not included in the Specification..

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 3722

Claims 7 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites "...the chamfer having an axial extension shorter than an axial extension of a transition from the cutting-face angle to the helix angle". Further review of the drawings does not explicitly show the claimed subject matter. Also note that there is no explanation or mention of this claimed subject matter in the Specification.

Claim 8 recites "...cutting-face angle of such cutting groove being equal to the lateral angle". Further review of the drawings does not explicitly show the claimed subject matter. Also note that there is no explanation or mention of this claimed subject matter in the Specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

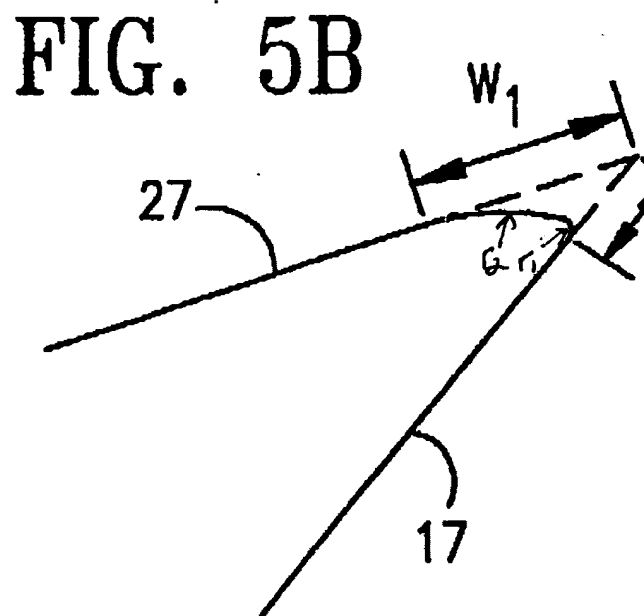
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-6 and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Britzke et al. (USP 5,609,447).

BRITZKE ET AL. teaches a rotary cutting tool (10) comprising a shank (11) and a cutting part (13) disposed at the front end of the shank and defining an axis of rotation (16) and an outer periphery of the cutting part (13) having cutting grooves (15) extending helically to the front end face of the cutting part and each cutting groove disposed rearwardly of the end face defining a helix angle with a plane containing the axis while having cutting edges formed at the edge ('447, Figure 1 and Col. 3, lines 26-38). BRITZKE ET AL. also teaches in figures 5, the helix angle being larger than a cutting-face angle formed between the end face and a front end section of each cutting groove, the cutting-face angle continuously transforming into the helix angle. BRITZKE ET AL. also teaches in figures 5 the cutting-face angle transforming (via a transition) into the helix angle along a constant radius of curvature (figure 5A) as well as the cutting-face angle transforming into the helix angle along a plurality of radii (figure 5B) whereby a first radius adjoins the cutting edge, and a second radius adjoins the helix angle (the first radius being smaller than the second radius: see figure below).

Regarding claims 5 and 6, BRITZKE ET AL. teaches in Figure 5B, the transition between the cutting-face angle and the helix angle extending substantially parallel to the axis for a distance shorter than a diameter of the tool as well as shorter than half the diameter of the tool (all see figure 4 for the diameter of the tool). Regarding claims 9 and 10, BRITZKE ET AL. teaches the rotary cutting tool comprising a drilling tool or a milling tool ('447, Col. 5, lines 55-59).



Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Britzke et al. (USP 5,609,447), in view of Meece et al. (USP 6,585,460).

BRITZKE ET AL. teaches a rotary cutting tool (10) comprising a shank (11) and a cutting part (13) and an outer periphery of the cutting part (13) having cutting grooves

Art Unit: 3722

(15) extending helically to the front end face of the cutting part, as set forth in the above rejection.

However, BRITZKE ET AL. fails to teach the end face and the outer periphery being joined by a chamfer.

MEECE ET AL. teaches a drill having an outer periphery (18) being jointed to the end face via chamfer (90) having axial extension shorter than its axial extension of the transition from the cutting face angle to the helix angle ('460, figures 1 and 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify BRITZKE ET AL.'s invention such that the outer periphery and the end face are joined via chamfer, as taught by MEECE ET AL. for the purpose of providing a cutting land ('460, Col. 3, line 61 to Col. 4, line 5).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sara Addisu at (571) 272-6082. The examiner can normally be reached on 8:30 am - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on (571) 272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Art Unit: 3722

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Sara Addisu
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SA
11/28/05


BOYER D. ASHLEY
PRIMARY EXAMINER